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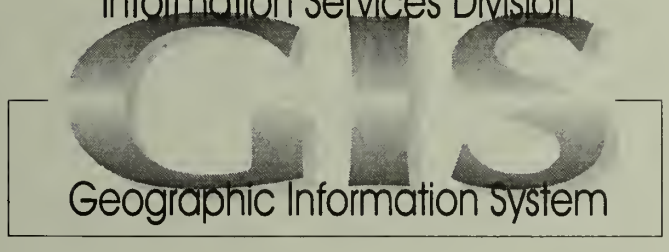
# Montana Addressing Guidebook for Local Governments




*Prepared by:*
Department of Administration
Information Services Division
P.O. Box 200113
Helena, MT 59620-0113

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# INTRODUCTION

During the 1997 legislative session, the Montana legislature passed House Bill 210 which provided funding for enhanced 9-1-1 service. Effective July 1, 1997, the monthly fee assessed against telephone access lines for 9-1-1 increased from $.25 to $.50.

Enhanced 9-1-1 service automatically displays a caller's location on a computer screen at a call answering center. Also displayed is the caller's telephone number, which can automatically be redialed if the line is disconnected. Therefore, if the caller is unable to speak, or unable to provide location information, he or she can still be located with a map.

To gain the full benefits of enhanced 9-1-1 service, each telephone number must be linked to a physical address, so that any 9-1-1 caller can be located by emergency service providers. In addition to providing the location for emergency responders, the physical address of the telephone will also determine how the 9-1-1 call is routed. Enhanced 9-1-1 uses a caller's location, not telephone exchange, to direct a call to the appropriate call answering center. This contrasts with current basic 9-1-1 service, which sometimes cannot route the call to an answering center capable of dispatching the emergency assistance to the caller's location.

Creating physical addresses requires naming all roads, including private roads, with unique names and assigning numbers consistently to all properties. Once the road names and property numbers are assigned and adopted by the community, the new physical addresses can be used for 9-1-1 service, for mail delivery (once Postal Service operational changes are complete), and by utilities, delivery services, and others.

Creating physical addresses is not mandated by the enhanced 9-1-1 system, but it is a responsible act of local government. By assigning physical addresses, a community allows its residents to take full advantage of enhanced 9-1-1 service.

This handbook was modeled on the Addressing Guidebook developed for the State of Maine by

The Maine Emergency Services Communications Bureau

The handbook contains a list of recommended tasks for creating physical addresses. Besides this handbook, community base maps will be provided to counties at no cost, upon request, to start the addressing process.

Questions about this handbook or the addressing process should be directed to:

Surry Latham, 9-1-1 Program Manager
Department of Administration
Room 226
Mitchell Building
Helena, MT 59620-0113
(406) 444-2420

or

Stewart D. Kirkpatrick, GIS Services Section Manager
Department of Administration
Room 229
Mitchell Building
Helena, MT 59620-0113
(406) 444-9013

## OVERVIEW OF THE PHYSICAL ADDRESSING PROCESS

The most important reason for creating physical addresses is for the quick location of properties by law enforcement, fire, and emergency medical services personnel. A community should establish a single locatable addressing system that can be adopted for all addressing purposes, including emergency services, mail delivery, private delivery services, municipal records, and utilities. Ideally, there should be one address per dwelling that can be used for all purposes. Having more than one address can confuse a caller when confirming a location in an emergency, and can also confuse those who are responding to the emergency.

For citizens to gain the greatest benefit from Enhanced 9-1-1 service, a community's addresses should conform to the recommendations in this handbook. These recommendations were developed by the Department of Administration's Geographic Information Systems (GIS) section and the 9-1-1 Program.

By following the steps recommended in this handbook, a community will insure that the new addresses provide the best address information for the Enhanced 9-1-1 database, and they can be used by more than just emergency service providers. The addressing process described is based on local addressing committees working with GPS/GIS vendors and the Montana Department of Administration, and completing a series of tasks which include:

- establishing addressing standards
- naming all roads with unique names
- obtaining property and road measurement, or working with a private contractor to obtain this information
- verifying new address maps
- working with local post office officials and others to convert addresses from old to new
- maintaining the accuracy of the addresses once they are created

The recommended addressing system is the "frontage interval" system. This system is based on the distance of a structure from a designated road beginning, usually an intersection. Once the "starting point" is determined, where the numbers begin to ascend, a standard interval in feet is used to assign consecutive property numbers along a street, regardless of whether a building is there or not.

Rural and municipal addressing is primarily a local government responsibility. For the project to be successful, elected officials, such as County Commissioners, must make the commitment to address, and understand the scope of the project and the cost of such a project. They must realize

that, once the project is completed, the system must be maintained. The addressing system should be officially adopted before work is started.

County funds represent the basic funding for the addressing project. There is no state funding available for this project. 9-1-1 jurisdictions may use some of their State 9-1-1 Program funds to contribute to the project, providing their plans generally conform to these guidelines. Other funding sources may include grants, or contributions from other county or municipal agencies, or from the private sector.

Each county that requests addressing assistance from the Dept. of Administration must designate a person as their Addressing Coordinator. The name, title, if any, address, and phone number of the Coordinator must be submitted to the 9-1-1 Program Office. This person will most likely be the chair of the local Addressing Committee, but could be a municipal or elected official.

You will need to find a source for map work. You may decide to hire an engineer or consultant for this work, or you may request "base maps" from the Department of Administration (DOA). The source of these maps is "Tiger" files obtained from the US Census Bureau. These maps are approximately 80% accurate, according to the US Census Bureau. The maps you decide to use as working copies should be as uncluttered as possible, and be large enough that notes can be clearly made and locations clearly marked.

The use of computer mapping is recommended as the best way to control system maintenance problems and reduce costs. By using a geographic information systems (GIS) compatible data structure, it becomes possible to collect large amounts of information related to street and address information, such as location of bridges, culverts and stop signs, speed limit information, school districts, voter precincts, zoning information, and other site attributes. Global Positioning System (GPS) collected road centerline and structure location data for addressing integrate well with GIS.

Unless the county has proven ability to do GPS/GIS work, the county should hire a GPS/GIS contractor to perform the GPS measurement of all structures and roads. Information regarding contractors who can provide this service is available upon request.

Following the GPS measurement of all structures and roads, the contractor should provide an updated set of maps showing the location and addressing of structures. The local address committee must then verify that the maps are accurate, and make whatever corrections necessary. Once this work is completed, the community should work with their postmaster to match old addresses to the list of new addresses.

Once the physical addresses have been assigned, this information can be used by the telephone companies and the public safety answering point (PSAP) personnel to create the Master Street Address Guide (MSAG), the data base to be used for the Automatic Location Information (ALI) component of Enhanced 9-1-1.

## WORKING WITH THE US POSTAL SERVICE

For many years, the U.S. Postal Service (USPS) has used rural routes to deliver mail to residents living in rural areas. Since the Postal Service now uses 2 digit numbers for rural routes, someone with an address of RR03 Box 12, for example, is one of many people living along a particular rural route created to deliver mail in that area.

The USPS may also contract with a private contractor for rural mail delivery. Routes where mail is delivered by a contractor are known as Highway Contract Routes. The contractor might begin the delivery route in one of the larger cities or towns in the area, and deliver for two or more towns, picking up the mail to be delivered in each of the rural post offices on the route. An address of HC65 Box 12 would indicate an address along a Highway Contract Route. Today in Montana, the USPS has 85 post offices making more than 73,200 mail deliveries each day on 197 rural routes. In addition, there are over 32,630 deliveries made each day for post offices using highway contract routes for mail delivery.

With the coming of Enhanced 9-1-1 service, it is recommended that rural route addresses be changed to physical addresses to better locate dwellings in an emergency. To avoid confusion, it is important that the physical address also be used for mail delivery.

Given the large number of rural mailing addresses used in the state, the USPS may request that the address changes be phased in over a period of time, so the postal service need not make all the necessary changes at once in a given area. The USPS will also require a printout or data base that contains both old addresses and new addresses (see section 4a, page 16).

The Addressing Committee should contact the local Postmaster and the USPS Office of Address Management Systems in Billings early in the planning process. (See section 1d, page 9).

## RECOMMENDED STEPS FOR PHYSICAL ADDRESSING

(The page number where information can be found for a step is shown in parentheses.)

**Step One: Getting Started**

1a. Establish an Addressing Committee with a designated leader. (7)
1b. Find an agency or person in your county who will be the rural addressing coordinator. (8)
1c. Locate a source for base maps or request base maps from DOA. (8)
1d. Involve the United States Postal Service (USPS) in addressing activities. (9)
1e. Inform residents of addressing plans. (9)
1f. Contact neighboring communities on addressing issues. (10)

**Step Two: Develop Addressing Standards**

2a. Develop addressing standards. (10)
2b. Draft addressing ordinance and seek approval from local legislative body. (12)
2c. Investigate and establish cost share partners. (12)
2d. Appoint a road sign subcommittee. (13)

**Step Three: Data Collection and New Addressing**

3a. Identify all roads/areas to be covered by emergency services. (13)
3b. Name all roads possible before data collection. (15)
3c. GPS collection. (15)
3d. Process new road data and produce new maps and addresses. (15)
3e. Verify new maps and addresses and name unnamed roads. (16)

**Step Four: Address Storage**

4a. Develop format and method for storage of assigned addresses. (16)

**Step Five: Address Conversion**

5a. Complete address conversion list. (17)

**Step Six: Complete Addressing Process**

6a. Inform property owners of address changes. (18)
6b. Install new road signs and update property numbers. (18)
6c. Implement new addresses and begin address maintenance. (19)

STEP ONE: GETTING STARTED:

## 1a. Establish an Addressing Committee with a designated leader

The Addressing Committee will be responsible for handling the majority of tasks associated with the addressing project. It will be necessary for the Committee to make several decisions early in the process: determining which roads should be included in the community's emergency road network, the method to be used for road naming, the standards for number assignment, and the extent of coordination necessary with neighboring counties. Eventually, all the tasks listed in this handbook will be handled by this committee. Depending on the amount of authority granted to the committee, it will be able to make decisions on its own or with approval from its local legislative body.

Members of the Addressing Committee might include elected officials who have approved the project, the Disaster and Emergency Services Coordinator, an employee of the local planning office, a member of the 9-1-1 Advisory Board or 9-1-1 Planning Committee, representatives from the community's law enforcement, fire, or emergency medical services, and other county personnel who have data bases pertinent to the project, such as the road department, surveyor's office, tax office, etc. Smaller committees tend to be more efficient; larger groups allow more members to be assigned tasks. Regardless of the group's size, it is important to have committee members who are willing to stick with the process and pay attention to detail and accuracy. Addressing projects, depending on the scope and complexity, may take as long as three to four years to complete.

The person who will eventually be responsible for maintaining the accuracy of the addresses once they are created may or may not be a member of the committee. If not a member of the committee, this person should be kept informed as work progresses.

Once established, the committee should choose a chairperson to lead the group and insure progress toward completing the tasks. This person could serve as the community's designated County Contact for addressing matters with the DOA GIS office and the 9-1-1 Program. Many jurisdictions have found it helpful for this individual to be computer literate, as many of the addressing tasks are more efficiently completed using computerized methods.

**Any community desiring assistance that has not appointed a County Contact should do so, and notify the 9-1-1 Program of the name, address and telephone number of this individual.** The County Contact will receive all future mailings on addressing matters from the Department of Administration.

## 1b. Find an agency or person in your county who will be the rural addressing coordinator.

After the addressing project is completed, someone must be responsible for maintaining the system. Address changes or additions will occur with varying frequency, but the effort to maintain these changes must be prompt and efficient. If the system is not properly maintained, the work put into establishing the new addresses will be wasted.

Typically the person assigned this responsibility will be a county employee, such as Director of Emergency Management, employee of the Planning Office or the County Surveyor's Office, etc.

Address maintenance responsibilities include:

- Answering questions from citizens
- Monitoring local development activities for the creation of new roads and subdivisions to assign new addresses. This would include coordination with entities that monitor new construction, such as power companies (new meters), telephone companies (new installations), building departments (building permits), environmental health (septic permits), etc.
- Calculating and assigning property numbers
- Updating address databases as needed
- Providing current information to the Enhanced 9-1-1 database administrator
- Insuring that the address database is secure and that a duplicate paper or computer file is created and stored away from hazards or loss

## 1c. Locate a source for base maps or request base maps from DOA.

Every county in the state will automatically receive an addressing handbook for use by their Addressing Committee. The committee may decide to use maps from another source other than the Department of Administration. If this is the case, once the base maps have been obtained, the committee should proceed to step 1d.

**To obtain base maps from the DOA, the committee should address the request to:**
Stewart D. Kirkpatrick, GIS Services Section Manager
Department of Administration
Room 229
Mitchell Building
Helena, MT 59620-0113 (406) 444-9013

## 1d. Involve the USPS in addressing activities

At this point the Addressing Committee should contact their local Postmaster(s). The USPS uses computerized mail sorting equipment, and it is extremely important that the new addressing system uses a format that can be read by this equipment. Therefore the Postmaster(s) should be involved in the planning process.

The Addressing Committee should also contact the USPS Office of Address Management Systems in Billings to discuss the level at which they wish to be involved in the addressing project. These steps are very important to insure that the new addresses will be used for both emergency service location and mail delivery.

The USPS representatives at the Office of Address Management to call for additional information are:

Greg Howey 406 657-5734 or

Larry Lippman 406 657-5725

## 1e. Inform residents of addressing plans

Residents should be educated on the need for physical addresses for Enhanced 9-1-1 service. By encouraging citizen input and participation in the project, particularly in the creation of new road names where needed, the inevitable objections and resistance to changing addresses can be reduced. It is helpful to have public announcements sent out via radio and newspapers, especially during field data collection.

While the creation of physical addresses has many advantages for a community, there are genuine reasons for resistance. Those listed below and others should be openly discussed and considered in the planning process.

- A change of road name and number will mean that citizens must change their addresses on work records, drivers licenses, credit cards, and magazine subscriptions. Checks must be reprinted. Businesses, relatives and friends must also be notified.

- Business owners typically feel a close identification of their activities with their addresses and are reluctant to change. They will also have to pay to acquaint the public with their new address, such as having signs repainted and new stationery and business cards printed.

- Historical societies or other members of the community may dislike the change in historic street names.

- Finally, there will be some objection just because it is a change.

A variety of methods can be used to inform citizens of the benefits of Enhanced 9-1-1 service and the need to create physical addresses. These include letters, newsletters, public service announcements on TV or in the newspaper, and public meetings. Summer residents who live elsewhere in the winter should also be kept informed. A sample informational letter can be found in Appendix A on page 20.

**1f. Contact Neighboring Communities on Addressing Issues.**

It is recommended that the Addressing Committees coordinate its activities with neighboring counties, and that this be done early in the addressing process.

When a road travels from one county to another, or runs in and out of a neighboring county, those affected counties should discuss the consistent naming and numbering of these roads to eliminate any possible confusion. This is particularly true where adjacent counties share emergency service providers or dispatching services. In this situation, adjacent counties should discuss with each other the implications of duplicate road names that exist in both counties.

In addition, several counties working together can significantly reduce the costs of data base development if they are using a GIS/GPS contractor.

Early discussion on these issues may help avoid disputes that might arise over road naming and numbering. For the name and contact information of Addressing Committee leaders in neighboring counties, please call one of the DOA contact people listed on page 2 of this guidebook.

STEP TWO: DEVELOP ADDRESSING STANDARDS

**2a. Develop Addressing Standards.**

Creating and implementing a county addressing plan, whether it is limited to rural addressing or includes readdressing some areas, can be an expensive undertaking. Developing addressing standards before the data collection process takes place can significantly reduce the risk of making costly mistakes than can mean data recollection or a inappropriate address data base for Enhanced 9-1-1 purposes. Additionally, developing addressing standards fits well into the concept of project preplanning, which can reduce costs as well by developing cooperative partnerships. Addressing standards should be clear, consistent, easy to explain and flexible enough to accommodate growth in the community. Thoughtfully written standards will allow for permanent physical addresses that will not have to be changed.

**Addressing standards should include the following:**

1. *Road naming guidelines*: Because of the uniqueness of counties and the anomalies that may occur within them, no one set of naming conventions can be established that will adequately address the needs of every county. However, certain precepts such as requiring unique names, having each road named with only one name over its continuous length, and eliminating similar sounding names are necessary for responsible physical addressing. We recommend adopting as many of the suggested road naming conventions as possible from the Maine Road Naming Guidelines, Appendix C on page 24.

2. *Numbering Origin*: Like many other phenomena, roads have a beginning and end. Producing standards that consistently generate a road origin where numbers begin to ascend will be a challenging task for a county. At present, roads and therefore road numbers may originate from county boundaries, a main highway or thoroughfare, or the center of a town. The best numbering plans are those that develop the most consistency over the greatest area of the county without rendering inconsistent those existing areas where addresses are to be kept. In some areas good addresses may have to be changed to develop consistency.

**Communication with neighboring counties is especially important.** In those areas where different counties share an Emergency Service Bureau it can be critical that a shared origin of a road exist. Otherwise duplicate address situations may arise. See Appendix F on page 34 for more information on intercounty naming and numbering procedures.

3. *Frontage interval*: This is the standard interval in feet used to assign consecutive property numbers along a street, regardless of whether a building is there or not. This interval is assigned by a computer. It is absolutely necessary to do it this way to allow for structure infill in the future. Any system that does not provide the flexibility to accommodate change may force the renumbering of properties in the future.

The interval distance is a decision that must be based on the existing housing density and on expected future development. Consider that a 50 ft. interval allows for approximately 200 numbers per mile (100 per side of road), so a road would have to be almost five miles long for a resident to be assigned a four digit house number. Similarly, an interval of 10 ft. produces approximately 1000 numbers per mile so only roads over nine plus miles would carry five digit house numbers. We recommend a consistent frontage interval, if possible, over the entire county. This eliminates the possibility of emergency response providers becoming used to the change from three to four digit house numbers occurring at a certain mile marker, and then experiencing a different situation on a road with a smaller or larger frontage interval.

Counties may choose to make an exception to the above recommendation and use existing milemarkers on US and State highways. When using the "milemarker system," existing milemarker stations are used as a numbering basis, with 100 addresses between each milemarker, 50 addresses on each side of the highway. Counties should be aware that adopting this form of

addressing will result in a different frontage interval than that used in the rest of the county.

4. *Odd and even sides of road*: The recommended standard is that even numbers be assigned to structures on the right side of the road and odd numbers to the left, ascending from the numbering origin. If a significant part of a county, has been previously numbered in a different fashion (opposite or using an east/west or north/south system), then that scheme should be continued to maintain consistency.

5. *Numbering guidelines*: Standards should also be established for circular streets, cul-du-sacs, apartments, condominiums, duplexes, businesses, corner lots, mobile home parks, and other situations. See Appendix D on page 28 For a more complete list of property numbering recommendations.

**2b. Draft an addressing ordinance and seek its approval from local legislative body.**

The addressing committee should draft the standards into a local ordinance and submit it to the local legislative body for approval. While this may not be required for Enhanced 9-1-1 addressing procedures, it offers several advantages. It provides a path down which future addressing efforts can proceed, and guidelines that the local addressing committee can follow, even if membership on that committee changes. It will mandate that the public be informed of the county's addressing efforts, so they become involved and participate in the process. Finally, it formalizes a process that in many Montana counties is one that many entities have interest in but no one party has official sanction to manage. A sample ordinance can be found in Appendix B on page 21.

**2c. Investigate and establish cooperative partnerships and develop a data collection plan.**

As mentioned before, addressing projects collecting digital GPS road centerline and structure data can be expensive. However, road centerline data may serve many additional purposes other than Enhanced 9-1-1 if a comprehensive data collection preplan is developed. For example, public works or road departments could use the same data collection effort to collect bridge and culvert data, location and condition of traffic signs or pavement conditions. The State Department of Transportation may be interested in obtaining an updated county road system. The State Department of Revenue or private realtor/appraisal groups may be interested in obtaining digital images of structures. Because one well planned, comprehensive data collection effort may ultimately reduce the cost to individual county departments, initial investigations into cooperative cost share arrangements are well worth the time.

The GIS Services Section at the Department of Administration will be happy to assist and advise you in how to assess your counties needs for road centerline data and additional road attributes that may enhance the basic data set. At this time a county may wish to investigate hiring a qualified GPS/GIS contractor to not only collect the data, but assist in the mission pre-planning that will be critical to a successful effort.

**2d. Have a subgroup of the addressing committee determine road sign needs and sources**

Every road that receives a new or changed name will require a new road sign. It is wise to have a group established and actively working on road sign specifications and obtaining price quotes from various vendors. Besides several private vendors, the Montana State Prison has done this kind of work before. For more information on services the Prison can provide please contact:

Dave Foster
MSP Sign Shop
406-846-1320 ext. 2263

For more details on sign specifications please refer to Appendix E on page 32. This group should also be involved in determining how display of individual property numbers should be handled. Preferences for property numbers can also be found in Appendix D on page 28. Compliance may require a local ordinance.

STEP THREE: DATA COLLECTION AND NEW ADDRESSING

**3a. Identify all roads/areas to be covered by emergency services, all roads/areas to receive new physical addresses, and all roads/areas where GPS collection will take place.**

This is one of the most important, and possibly most difficult steps to complete. The addressing committee should assemble the best maps of the county that it can locate. In some cases this will be 1:100,000 TIGER file maps provided by DOA. These maps can be supplemented with small scale public land ownership maps and possibly other map sets. Some counties will have better map sources and not need to rely on the state.

Each county will need to decide what areas within the county will be covered by emergency services. Some areas under U. S. Forest Service or BLM ownership, or other situations may be excluded.

Each county must decide what roads/areas will require new physical addressing. Many urban areas within each county are already addressed using a block system. Changing a system that is already addressed and in all likelihood will not receive much new growth may not make much sense. The county must evaluate the present addressing system to examine how well it conforms to the new addressing standards set forth. If it is reasonably consistent in numbering schemes and directions, and there are few duplicate or similar sounding names, it is probably not worth changing.

Each county must also decide which roads/areas will undergo GPS collection efforts. Technically, if an road/area is eliminated from the new physical addressing procedure it would not need to be digitally collected using GPS. We highly recommend that counties collect as much of their road network as is practical and affordable. The value of addressed road centerlines goes far

beyond Enhanced 9-1-1 purposes. If a county has any intention of moving in the direction of GIS technology in the future, they are advised to make any GPS collection effort as complete as possible. Areas void of new GPS data or existing digital road data will not be able to use new computerized addressing methodology.

At this point, if it hasn't already, a county should choose a qualified GPS/GIS contractor to complete the job of data collection. A county may choose to do this themselves, however they should be well aware that unless they are well trained and qualified, the possibility of collecting bad, incomplete, or totally unusable data is a definite reality. Attribute collection and collecting structure locations require GPS and database software knowledge. Mission preplanning is another vital component that contractors are well versed in.

Counties should be aware that there is much more to GPS than putting an antennae on a vehicle and driving down the road. There are many issues to consider. For example, data needs to be collected from the USPS (Postal Edit Sheets), the County Assessor (resident information), telephone records, rural fire department numbers, etc. This information is needed by the field crews to allow them to determine, at each mapped structure, the old address and the name of the resident or business that occupies the building. **The costs of collecting data more than once, or collecting bad data, will soon negate the savings associated with using county personnel to do the job.**

Field data collection has two purposes: to georeference a location for the new address and to try to gather visual information from the mail box, postal edit sheets, rural route maps, assessor data, and telephone records. Sometimes personal contact is necessary to verify that all the information is correct. This is an extremely difficult task which may slow data collection, but will be the hinge pin of the entire project.

If a solid match can't be made in the field between structure and resident, a self-addressed, stamped post card should be left on the structure (not in the mailbox) to be returned to the county. A number is recorded on the post card and in the GPS file to match up later when the post card is returned. The post card should have fields to be filled out by the occupant for name, address, phone number, etc. A 70%-80% return can be expected if the card is stamped. Contacts will need to continue until a near 100% match is made between structure and occupant. This information is critical to the later resident notifications and the Master Street Address Guide (MSAG) for Enhanced 9-1-1. Extra time spent in the field will pay off later.

The county should assign local guides who can work with whoever the county chooses to do the GPS collection. These guides could be local law enforcement or fireman, retired volunteers or any other individual who has the time and knows the area well. Different guides may be required for different areas of the county. These guides will ride with the GPS collector and point out roads, driveways and generally provide directions to eliminate as much confusion as possible.

### 3b. Name all the roads possible before GPS collection

Very likely, the original road base maps a county is using will have some road locations without any accompanying name. Using local expertise including the local guides and fire, police or sheriff officers, all verifiable and official road names should be entered on the maps. The GPS contractor will use these maps as collection proceeds, and prenaming roads will save time, labor and confusion.

### 3c. Proceed with GPS collection.

According to established standards and mission preplanning, GPS collection can proceed. Before attempting to collect all designated structures and roads we suggest that a small pilot area be collected to make sure that the data meets all participating parties expectations. It would be wise to process this sample data following the procedures outlined in sections 3d and 3e.

### 3d. Produce and verify new digital road coverage and address map

Using the GPS data that was collected, and any existing digital road data that the addressing committee found acceptable, new address maps must be created. This is an automated procedure using GIS software with dynamic segmentation capabilities. Basically, the roads are divided up into segments using the chosen frontage intervals, numbering origins and odd/even side of the road standards that the committee approved. Adjoining structures are addressed based on the numbered road segment perpendicular to them. A typical "new" address map is shown in Appendix G on page 35. An accompanying product is a complete list of addresses of the structures shown on the map(s). This list will be used later for converting old addresses to new addresses.

Counties with GIS capabilities in place may be able to proceed with this step on their own. Counties that plan to maintain their road networks and addresses in a computerized fashion but have no GIS at present, are encouraged to retain the services of a qualified GPS/GIS/addressing vendor that can see them through the project from start to finish. Counties with no plans to maintain or use the GPS data in a computerized fashion will be able to obtain hard copy paper maps containing their new addresses at no charge from DOA GIS Services, providing that the files are submitted to GIS Services by an approved GPS contractor. **Please contact DOA GIS services at 406-444-9013 before data collection, if this service is required**. We believe counties will be best served in the long run by planning to maintain a computerized address database and road network. This should prevent the neglect in maintaining county addresses that we have suffered in the past.

### 3e. Verify maps and assign new names to unnamed roads

When a county produces or receives its new address maps, the Addressing Committee will need to check the new addresses for completeness, accuracy, and conformance to the county's addressing standards. While the automated system produces accurate addresses for most structures, it is not always error-free. Particular items to check on the map are the addresses for corner lots, duplexes, and structures in close proximity that may be assigned the same address. Missing or incorrectly placed structures should be noted. Other items to check will be the correctness of existing road names, the road numbering direction (i.e. does it ascend from the designated origin), and frontage intervals. The only way to check for missing structures is for teams assigned by the addressing committee to redrive all the roads and check the map. Fire department and law enforcement personnel can be incorporated into this process. One way to determine if this will be cost effective is to proof sample sections of the map to check for percentage of accuracy. While one hundred percent accuracy will be hard to achieve, imperfect addresses will affect the performance of the E9-1-1 system.

This is the time when unnamed roads must be named and name changes for duplicate or similar sounding road names must be made. Local ordinances affecting road names may vary so the process must be left to each local Addressing Committee to accomplish the task while complying with the county's laws and procedures. This is also likely to be a procedure that attracts some controversy. Involving local residents in the naming or renaming process may be beneficial. Recommendations for road naming can be found in Appendix C on page 24.

Mark all address and road changes and mistakes on the map and return it to the party responsible for its creation for update. You should get back an updated, complete set of address maps for your county and an updated address list.

## STEP FOUR: ADDRESS STORAGE

### 4a. Develop format and method for storage of assigned addresses.

One of the more important steps in the addressing process is maintaining the accuracy of addresses once created. This includes correcting any errors or adding any addresses created for new construction or subdivisions. The Addressing Committee along with the Addressing Coordinator will need to create a database to insure the easy storage, maintenance, and transfer of information when the Enhanced 9-1-1 database is created.

This address database can be as simple as a card file or notebook log. Many communities choose to create a computer database to store and maintain the information. This also allows an easy transfer to the Enhanced 9-1-1 database. If considering the creation of a computer file, a computer software program such as a database or spreadsheet can be used. The address information could also be added to an existing database, such as one maintained by the local assessor, clerk and recorder or tax department. This has certain advantages as the addresses can

be used for other purposes and you are only maintaining county addresses in one department. If your county presently has a GIS in place, or you are contemplating the purchase of GIS, that department or a GIS vendor should be contacted to insure compatibility between the address database and other digital data sets.

Once addresses are assigned and approved, they can be entered into the database. At a minimum the following items should be entered. If using a relational database, the items other than the property number and address should be able to be linked to the address, if they are available. The maximum number of characters in certain data fields is shown in parentheses.

- New property number (8)
- Road name (48, includes direction and thoroughfare type such as road or avenue)
- Property owner name
- Tax map id - Department of Revenue geo-code and/or assessor number
- Existing (old) property address
- Tenant name if any

The size of the first two data fields are important to follow in complying with Enhanced 9-1-1 database requirements.

STEP FIVE: ADDRESS CONVERSION

**5a. Complete address conversion list**

This will be the most time consuming element in the addressing process by far. Many different techniques will likely have to be used to obtain complete conversion. Comparing any old address maps will be helpful. If the GPS collection process includes input of available old addresses while locating the structures, this data will be invaluable. If the new maps can overlay existing tax maps, addresses can be cross referenced to tax-ids, which through research should yield the owner name and old address. Additionally, in particularly hard cases, on-site visits or mailings may be the only way to obtain a match. The postmaster should be able to supply a list of all old addresses and be able to help link the new addresses as well.

**There is no way to overemphasize the importance of accuracy in this step.** A County's credibility and the safety of its residents' lives and property, as well as reliable mail delivery, depend entirely upon address accuracy. Creating new addresses consumes so many resources that counties should take all precautions to insure success with their first effort. Having to inform residents of errors after they have adopted a new address will not be appreciated. It is a good idea at this point to go over the list one address at a time. Then review the list one road at a time.

When the county and local post office have reviewed all addresses and then reconciled all discrepancies, the community should send its address information to the Postmaster for each zip code within the county for the assignment of Zip+4 codes and the updating of USPS address files. This USPS process will take approximately 45 to 60 days.

## 6a. Inform property owners of address change and effective date.

When a county receives its completed new addresses from the USPS, the county can then inform residents of their new addresses and announce the effective date for their use. The lead time for notifying residents before the effective date should be the same as in the addressing ordinance, but should not be less than 30 days. This will allow residents time to inform magazines, banks, utilities, family, friends, and others of the coming address change and time to post their new property numbers. A sample notification letter is found in Appendix I on page 37. This letter should include the new address, the effective date for its use, and a reminder for residents to clearly post their new number on their mailbox, front door, end of driveway, or wherever the county has designated in its addressing ordinance.

**The addressing committee can make arrangements with the local Postmasters to send the address change notification letters at no cost to the county for postage.**

The addressing committee may consider providing a staffed, toll free telephone service to aid residents with questions, comments, or problems in conjunction with the newly assigned addresses. This will also provide the opportunity to assure the correct address was assigned to the correct resident.

**Two other important items should be mentioned to residents**: One is to explain that completion of the addressing process does not necessarily mean Enhanced 9-1-1 service is immediately available. They should contact their local emergency service offices to determine when E9-1-1 will be fully functional. The other point is to tell residents that mail sent to either address will continue to be delivered for an extended amount of time, not to exceed one year.

Some communities have printed their notification letter in such a way as to place the name and address on the letter for use with a window envelope, saving the printing of mailing labels. The Addressing Committee should make sure sufficient change of address cards are on hand at the local post office and they may suggest to local hardware stores they increase their supply of numbers for use by property owners.

## 6b. Update or install road signs and property numbers as needed.

Before the effective date of new addresses, any needed road signs should be installed. Road signs and property numbers are the important final link in locating the structures of those callers in need of emergency assistance. Without them, emergency services providers may not be able to quickly locate a 9-1-1 caller's property.

Residents should be encouraged to post their new address numbers. Structures in cities are much easier to mark than those in rural areas, where the structures are often obscured by trees or are not visible from the road.

To insure that all house numbers are visible, it may be necessary to encourage rural residents to post their numbers a follows:

- First preference should be to put a number on the front of the structure, providing the number will be visible from the road.
- Mailboxes could be marked with the house number if the box is in front of and on the same side of the road as the house.
- If the structure is not visible and no mailbox is beside the driveway leading to the structure, a sign or number post should be erected to display the number. This sign or number post could display the number either vertically, from the top down, or horizontally.
- In Montana, it is very important that the number be placed high enough to not be obscured by snow, either fallen or plowed, during an average winter.

## 6c. Implement new addresses and begin address maintenance system.

The final step in the addressing process is also the beginning step of an ongoing maintenance process. With the effective date of new addresses comes the start of address maintenance. This requires an address database, a means to easily update and add address information, and a person responsible for doing so. The designation of a municipal address coordinator is described in Step 1b on page 7. Address maintenance guidelines are found in Appendix J on page 38.

Before and upon the commencement of a county Enhanced 9-1-1 system implementation, it is very important for a county to maintain the accuracy and completeness of its address information. This will require a county to add the addresses of new construction or subdivisions that are built after the original address database was created. By maintaining this information, a community will insure that its effort to create new physical addresses will provide the best information possible when it is requested for inclusion in the Enhanced 9-1-1 database. In the E9-1-1 database, each accurate physical address is linked to a phone number. The Public Safety Answering Points (PSAPs), along with the telephone companies, will be responsible for developing this database.

**Appendix A - Sample Information Letter**

Dear Resident,

Goodaddress County is responding to recent legislation allocating 25 cents per phone per month to establish Enhanced 9-1-1 service. The service will be used by residents to call for law enforcement, fire, and emergency medical services by simply dialing 9-1-1 on the telephone and requesting the appropriate emergency assistance.

The service is called Enhanced 9-1-1 because it displays the address of the caller on a computer screen at a call answering center. If a caller is hysterical, becomes unconscious, does not speak English, hangs up, or is unfamiliar with his or her location, such as an out-of-state visitor might be, the answering center will know exactly where to send help.

To provide the exact location of a caller, each telephone number must be linked to a physical address. A physical address is a permanent, unique address that clearly identifies where a property is located, such as 453 North Road or 98 Pine Lane. A rural route mailing address, such as RR1 Box 889, is not considered a physical address.

Creating physical addresses requires naming all roads with unique names and assigning numbers consistently to all properties. Once the road names and property numbers are assigned and adopted by our community, the new physical addresses will be used primarily for Enhanced 9-1-1 service. These addresses will eventually be used for mail delivery, utilities, delivery services, and others.

Recently, our community established an Addressing Committee to create the physical addresses recommended for Enhanced 9-1-1 service. The committee will be holding public meetings and contacting residents to seek their input in this addressing process. Citizen input will be specifically sought for renaming roads, if necessary, to eliminate duplicate or similar-sounding road names and to name all public and private roads, including fire roads, that are currently unnamed.

If you have any question or wish to volunteer to help addressing efforts in Goodaddress County, please call any of the Addressing Committee members listed below.

## Appendix B - Sample Addressing Ordinance

*Note: This sample ordinance is generic and cannot cover all possible circumstances or issues for every community. Communities are urged to tailor this ordinance to their local needs.*

### Section 1. Purpose

The purpose of this ordinance is to enhance the easy and rapid location of properties by law enforcement, fire, rescue, and emergency medical services personnel in Goodaddress County

### Section 2. Authority

This ordinance is adopted pursuant to and consistent with local ordinance 1 of Goodaddress County

### Section 3. Administration

This ordinance shall be administered by the (addressing authority), (who/which) is authorized to and shall assign road names and numbers to all properties, both on existing and proposed roads, in accordance with the criteria in adopted address standards. The (addressing authority) shall also be responsible for maintaining the following official records of this ordinance:

a. A Goodaddress County map for official use showing road names and numbers.

b. An alphabetical list of all property owners as identified by current assessment records, by last name, showing the assigned numbers.

c. An alphabetical list of all roads with property owners listed in order of their assigned numbers.

### Section 4. Naming System

All roads that serve two or more properties shall be named regardless of whether the ownership is public or private. A "road" refers to any highway, road, street, avenue, lane, private way, or similar paved, gravel, or dirt thoroughfare. "Property" refers to any property on which a more or less permanent structure has been erected or could be placed. A road name assigned by the town of Acadia shall not constitute or imply acceptance of the road as a public way.

The following criteria shall govern the naming system:

a. No two roads shall be given the same name (e.g., no Pine Road and Pine Lane).
b. No two roads should have similar-sounding names (e.g., Beech Street and Peach Street).
c. Each road shall have the same name throughout its entire length.

**Section 5. Numbering System**

Numbers shall be assigned every 50 (fifty) feet along both sides of the road, with even numbers appearing on the right side of the road and odd numbers appearing on the left side of the road, determined by the number origin. (The frontage interval may vary in more densely or lightly populated areas, and it should be so indicated where that particular interval applies.)

The following criteria shall govern the numbering system:

a. All numbers origins shall begin from the designated center of Arcadia or that end of the road closest to the designated center. (The numbering origin does not have to be the town center but could be a border with another community. See Step 2a on page 23 for suggestions.) For dead end roads, numbering shall originate at the intersection of the adjacent road and terminate at the dead end.

b. The number assigned to each structure shall be that of the numbered interval falling closest to the front door. If the front door cannot be seen from the main road, the number shall be that of the interval falling closest to the driveway of said structure.

c. Every structure with more than one principle use or occupancy shall have a separate number for each use or occupancy. (i.e. duplexes will have two separate numbers; apartments will have one road number with an apartment number, such as 235 Maple Street, Apt 2).

**Section 6. Compliance**

All owners of structures shall, by the date stipulated in Section 8, display and maintain in a conspicuous place on said structure, the assigned numbers in the following manner:

a. Number on the Structure or Residence. Where the residence or structure is within 50 (fifty) feet of the edge of the road right-of-way, the assigned number shall be displayed on the front of the residence or structure near the front door or entry.

b. Number at the Street Line. Where the residence or structure is over 50 (fifty) feet from the edge of the road right-of-way, the assigned number shall be displayed on a post, fence, wall, the mail box, or on some structure at the property line next to the walk or access drive to the residence or structure.

c. Size and Color of Number. Numbers shall be displayed in a color and size approved for use by the (addressing authority) and shall be located to be visible from the road. (Consider stating the minimum size of the number and the recommended color in this section.)

d. Every person whose duty is to display the assigned number shall remove any different number that might be mistaken for, or confused with, the number assigned in conformance with this ordinance.

e. Interior location. All residents and other occupants are requested to post the assigned number and road name next to their telephone for emergency reference.

**Section 7. New Construction and Subdivisions**

All new construction and subdivisions shall be named and numbered in accordance with the provisions of this ordinance and as follows:

a. New Construction. Whenever any residence or other structure is constructed or developed, it shall be the duty of the new owner to obtain an assigned number from the (addressing authority). This shall be done at the time of the issuance of the building permit (if required). (It will be necessary in rural areas where building permits are not required to work with utilities to require addressing at the time of electric meter installation, issue of septic permit, request for telephone service, etc.)

b. New Subdivisions. Any prospective subdivider shall show a proposed road name and lot numbering system of the pre-application submission to the Planning Board. Approval by the Planning Board, after consultation with the (addressing authority), shall constitute the assignment of road names and numbers to the lots in the subdivision. On the final plan showing proposed roads, the applicant shall mark on the plan, lines or dots, in the center of the streets every 50 (fifty) feet to aid in assignment of numbers to structures subsequently constructed.

**Section 8. Effective Date**

This ordinance shall become effective as of (date). It shall be the duty of the (addressing authority) to notify by mail each property owner and the Post Office of a new address at least 30 (thirty) days before the effective date of its use. It shall be the duty of each property owner to comply with this ordinance, including the posting of new property numbers, within 30 (thirty) days following notification. On new structures, numbering will be installed before final inspection or when the structure is first used or occupied, whichever comes first.

**Section 9. Enforcement**

(This section is optional. If included, it should designate the individual responsible for enforcing the provisions of this ordinance, such as the Code Enforcement Officer, Fire or Police chief, or other municipal officer, and state the penalties, if any, for violations.)

**Appendix C - Road Naming Recommendations**

- Every distinct road with two or more dwellings should be given a separate, unique name. This includes all fire and private roads. (There is a field for "community" in the Enhanced 9-1-1 data base, so similar names in different towns can be accommodated.)

- A long driveway with only one house at its end might be named if the potential exists to erect an additional house or other structure along that driveway.

- Each road should have one - and only one - correct name.

- A named road should be essentially continuous, without gaps.

- Road names should only change where there is substantial intersection, or at municipal boundaries.

- When needing to rename a road with two existing names in different sections, the name of the road that is used for the longest distance or is most heavily traveled should be kept.

- There should be no duplicate road names, such as Pine Road and Pine Lane.

- There should be no similar-sounding road names, such as Beach and Beech, Main and Maine, or Clark Road and Clark Hill Road.

- Road names should be assigned based on traffic patterns. When a road forks into two roads, the fork with the higher traffic volume should continue with the same name.

- If a road has more than one branch at the end, use separate names for the multiple branches.

- Roads should have a name and not be identified by a route number. (State or U.S. highway routes may be an exception but should be consistent with adjacent counties.)

- Avoid special characters, such as hyphens or apostrophes, in road names.

- When renaming roads, consider the following suggestions:

    a. The name of a road or street that has an historical reason for having its name should retain its name.

    b. The road with the most properties on it, and thus would require the most effort to coordinate residents, should retain its name.

c. The road that has retained its name for the longest time or has been consistently signed for the longest time should retain its name. The same would be true for a road with the more descriptive name.

- When considering the naming of roads that connect two other roads but have a middle section that is closed permanently or impassable at certain times of year, consider the following options:

    a. Retain the current name for one end of the road and assign a different name to the other end of the road.

    b. Retain the same name at each end of the road and assign two-digit numbers to properties along one end of the road and three-digit numbers to properties along the other end. If this option is chosen and the potential exists to further develop the road in the future, lay out the numbers to insure that there is no possibility of having any three-digit numbers at the two-digit end and vice versa.

    c. Assign a designator to each end of the road, such as North Mountain Road and South Mountain Road.

- Consider distinguishing private roads by using a consistent suffix such as Lane, Path or Trail.

- Roads within multi-structure complexes (e.g., business campus, multi-unit apartment complex) should be named and each structure individually addressed.

- When renaming roads in a community with significant summer population, send notices to seasonal residents, giving them opportunity to send in their road name suggestions within 30 days.

- Use themes, such as plants, trees, wildlife, other nature themes, or historical persons, to name unnamed roads, such as fire roads. Use a specific theme in a specific section of a community or around a specific body of water. Try to avoid using personal names other than historical persons.

- Keep road names short. They are easier to remember.

- When naming new roads, consider the following suggestions for thoroughfare type:

| | |
|---|---|
| Avenue = | A thoroughfare running principally in a north-south direction (or could be east-west depending on how "street" is defined) |
| Circle = | Short road that returns to itself; circular or semi-circular roads |
| Court = | Permanently closed road such as a cul-de-sac; dead end roads, usually under 1,000 feet in length; or horseshoe-shaped road |
| Lane = | Fire road or private road |
| Road = | Short drive that begins and ends on the same road |
| Street = | Usually found in downtown or more congested areas; run principally in an east-west direction (or could be north-south depending on how "avenue" is defined) |

- Every official road named should have a corresponding standard suffix that complies with the recommended Montana Enhanced 9-1-1 database standards to link telephone numbers with addresses. On the following page is the recommended list of suffixes.

| | |
|---|---|
| ALLEY | ALY |
| ANNEX | ANX |
| BEACH | BCH |
| BEND | BND |
| BLUFF | BLF |
| BOULEVARD | BLVD |
| BRANCH | BR |
| BROOK | BRK |
| BYPASS | BYP |
| CAPE | CPE |
| CAUSEWAY | CSWY |
| CENTER | CTR |
| CIRCLE | CIR |
| CONCOURSE | CONC |
| CORNER | COR |
| COURT | CT |
| CROSSING | CRSG |
| COVE | CV |
| CREEK | CRK |
| CREST | CRST |
| CRESCENT | CRES |
| CROSSING | XING |
| DALE | DL |
| DEPOT | DEP |
| DIVIDE | DV |
| DRIVE | DR |
| ESPLANADE | ESPLND |
| ESTATES | ESTS |
| EXPRESSWAY | EXPWY |
| FALLS | FLS |
| FIELD(S) | FLD(S) |
| FOREST | FRST |
| FORK | FRK |
| FORT | FT |
| FREEWAY | FRWY |
| GARDEN(S) | GDN(S) |
| GLEN(S) | GLN(S) |
| GREEN(S) | GRN(S) |
| GROVE(S) | GRV(S) |
| HARBOR | HBR |
| HAVEN | HVN |
| HEIGHTS | HTS |
| HIGHWAY | HWY |
| HILL(S) | HL(S) |
| HOLLOW | HOLW |
| INLET | INLT |
| JUNCTION | JCTN |
| KNOLL | KNL |
| LANDING | LNDG |
| LANE | LN |
| LOCK(S) | LCK(S) |
| LODGE | LDG |
| LOOP | LOOP |
| MALL | MALL |
| MANOR(S) | MNR(S) |
| MEADOW(S) | MDW(S) |
| MILLS | MLS |
| MOUNTAIN | MTN |
| NECK | NCK |
| ORCHARD | ORCH |
| OVAL | OVAL |
| PARK | PARK |
| PARKWAY | PKY |
| PASS | PS |
| PATH | PATH |
| PIER | PR |
| PIKE | PKE |
| PINES | PNES |
| PLACE | PL |
| PLAZA | PLZ |
| POINT | PT |
| PROMENADE | PROM |
| REST | RST |
| RIDGE | RDG |
| ROAD | RD |
| ROADWAY | RDWY |
| ROUTE | RT |
| ROW | ROW |
| RUN | RUN |
| SHORE(S) | SHR(S) |
| SPRING(S) | SPG(S) |
| SQUARE | SQ |
| STATION | STA |
| STREAM | STRM |
| STREET | ST |
| SUMMIT | SMT |
| TERRACE | TERR |
| THRUWAY | THRWY |
| TRACE | TRCE |
| TRAIL | TRL |
| TURNPIKE | TRNPK |
| VALLEY | VLY |
| VIEW | VW |
| VILLAGE | VLG |
| VILLE | VL |
| VISTA | VIS |
| WALK | WLK |
| WAY | WY |

**Appendix D - Property Numbering Recommendations**

- Property numbers should proceed from the numbering origin and be assigned in consecutive numerical sequence, based on the established frontage interval along the road.
- Numbers should be assigned to all structures that are inhabited or that have or may have phone service, including free-standing phone booths, but not to tax lots and parcels.
- If a portion of a community is already addressed, any new numbering system developed should be compatible and consistent with the old numbering system.
- Even numbers should be assigned to structures on the right side of the road and odd numbers to the left, ascending from the numbering origin. If a community has been significantly addressed in the opposite fashion, then it might wish to continue with that scheme to maintain consistency.
- Duplexes should receive two separate numbers, or be numbered like apartments.
- Apartments or suites should be given a primary address with numbers or letters as secondary location indicators (e.g., 111 Main St, Apt A, or 111 Main St, Suite 101).
- Condominiums could be assigned addresses like apartments or could be addressed like individual dwellings would be along a road.
- Shopping center numbers should be assigned within the range available to the property.
- Corner lots should be assigned a number according to the access point of the residence. In rural areas, this will typically be the middle of the driveway at the intersection with the road. In urban areas, where the residence is close to the street, it may be the where the front door faces the street. See drawing on page 31.
- For circular roads, numbering should begin at the point where emergency responders are most likely to enter the road, so numbers will be ascending as responders search for a location. Where there is no obvious traffic flow, it is recommended that the starting point be selected at the end closer to the designated numbering origin. Whatever method is selected, it should be applied consistently within the municipality. See drawing on page 30.
- Cul-de-sacs without buildings in the center portions should be numbered as if the center line of the street bisects the cul-de-sac with even numbers on the right and odd numbers on the left. See drawing on page 31.

- Mobile home parks should be assigned one address on the main road, followed by unit or lot numbers for the individual homes, such as an apartment building would be numbered. Another option would be to name all the roads and number all the homes within the park, as any property would be numbered on any road. See drawings on page 30 and 31.

- When a road is sandwiched between two roads, numbering should begin where emergency responders are most likely to enter the road, so numbers will be ascending as responders search for a location.

- The logical order of address elements should follow U.S. Postal Service conventions: road numbers, pre-directional, primary road names, suffix, post-directional, and secondary number, if any (e.g., 100 W Main St, Apt 201).

- Address number signs on residences should conform to the uniform building code.

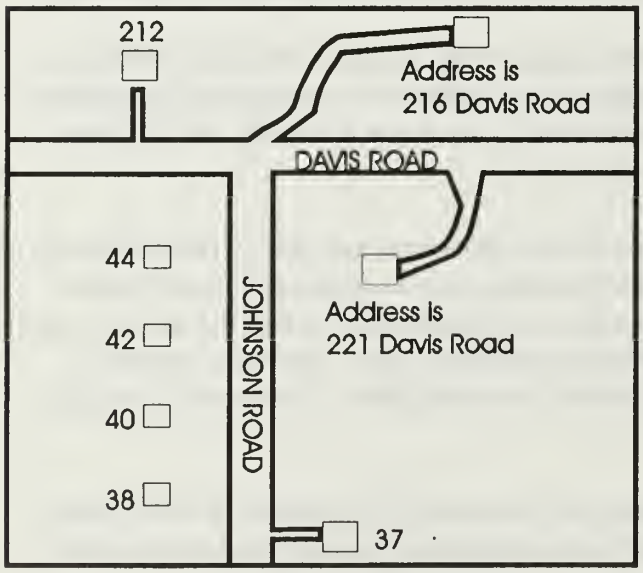
- Primary property numbers should not be longer than six characters.

- There should be no fractional addresses (e.g., 101 ½ Main St.).

- Alphanumeric address numbers should not be used (e.g., 123A Main St.).

- Hyphenated address numbers should not be used (e.g., 41-656 Bell St.).

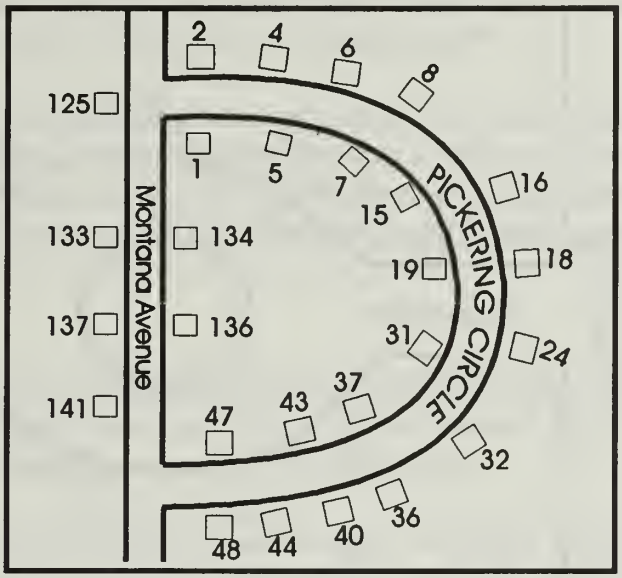
**Assignment Allocations**

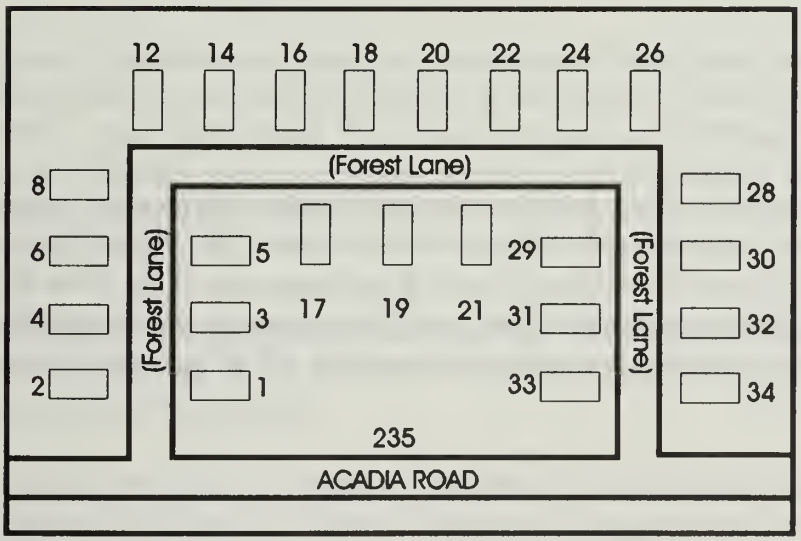



When assigning numbers in rural areas, the location of the center of the driveway where it intersects the road should determine the number. In urban areas, there may be cases where the front of the residence is used, especially when the residence is close to the street, and the front walkway is the entry point.

## Circular Roads

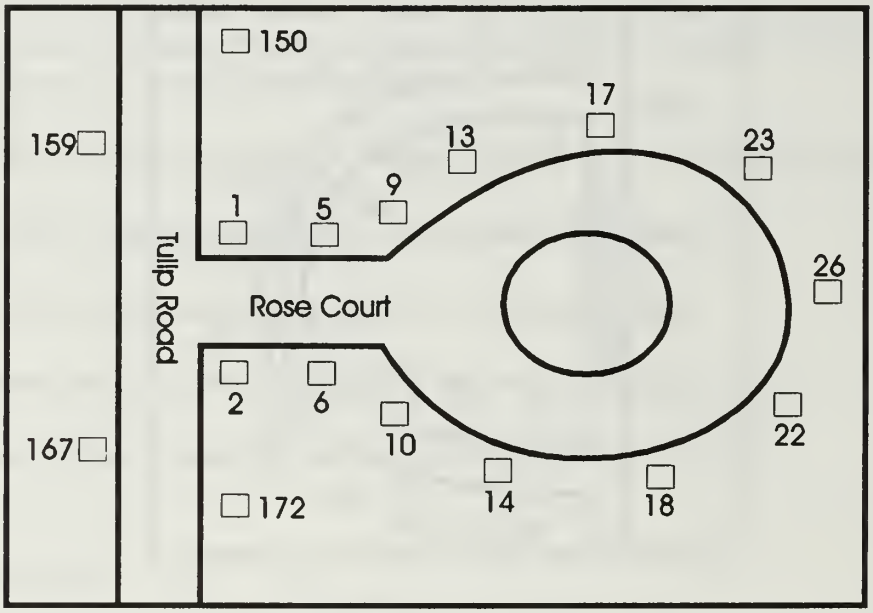
Circular roads should begin numbering at the low numbered intersection, with odd and even numbers following the set standard. The outside of the circle is numbered first and consecutively. The inside is then numbered to match and mix with the outside. This will result, in some cases, in fewer numbers on the inside of the circle, and also with spaces in the numbers.



**Mobile Home Parks**

Mobile home parks can be numbered just like apartments. The difference would be that mobile home parks will be designated as lots instead of apartments. The full address of a home in a mobile home park would be 235 Arcadia Rd., Lot 17. An alternative would be to name the mobile home park road and then number the homes a single-family dwellings on any road, such as 17 Forest Lane.




**Cul-de-sacs**

Cul-de-sacs often require applying guidelines for both dead end streets and circular streets. The numbering begins from the intersection toward the cul-de-sac. Once in the cul-de-sac, the numbers proceed odd around one side of the circle and even around the other side to the top or bottom of the circle. On rare occasions, there may be structures inside the cul-de-sac. When this occurs, number the structure or structures in the way that will fit best, such as where the front door faces.

**Appendix E - Road Sign Guidelines**

Placing road signs is one of the final, and more important tasks in addressing. To assist both emergency service personnel and the general public, signs must be visible and maintained. A frequent complaint about road signs is that they are often hidden by tree branches. Annual trimming can eliminate this problem.

There are several varieties of signs that are suitable for public road use. The most common is the green background with reflective white lettering and white border. Regardless of color, it is important to insure the letters are tall enough and thick enough to be easily seen day or night, and the street name sign should be reflectorized or illuminated.

Listed below are guidelines concerning size, placement, materials, colors, and lettering for road signs. They are based on the Traffic Engineers' Manual used by the Montana Department of Transportation and the Manual on Uniform Traffic Control Devices used by the Montana Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration.

**Sizes**: Lettering on road name signs should be at least four (4) inches high. Supplemental lettering to indicate the type of road (e.g., Street, Avenue, Road, etc) or section of city (e.g., N.W.) May be in smaller lettering at least two (2) inches high.

On highways and in rural areas, ground mounted signs street signs should use a 150 mm letter size for major legends and 100 mm for abbreviations on normal width streets. Wider streets may require a larger size.

**Placement**: In business districts and on principal arteries, road name signs should be placed at least on diagonally opposite corners so that they will be on the far right-hand side of the intersection for traffic on the major street. They should be mounted with their faces parallel to the streets they name. In residential districts, at least one road name sign should be mounted at each intersection. In rural districts, signs should be placed to identify important roads not otherwise marked.

On intersection approaches, a supplemental road name sign may be erected separately or below an intersection-related warning sign. When combined with a yellow diamond sign, the color would be a black message on a yellow background.

The preferred mounting method for road signs is post top mounting brackets. Hardware for mounting signs to posts should be subsidiary to other items. The minimum vertical clearance should be eight (8) feet to the bottom of the sign for post top mounting.

**Materials**: The most commonly used material for blades is either extruded aluminum with a 0.25 inch flange thickness and a 0.090 inch web (min.) or flat sheet aluminum with a minimum thickness of 0.125 inches. Other materials, such as fiberglass, can be used, if they achieve the same level of visibility and durability.

**Colors**: The signs should have a reflectorized white or silver text (stick-on reflective letters) on a reflectorized green background, or some contrasting color. The colors should conform with those found in standard color tolerance charts as approved by the U.S. Department of Transportation Federal Highway Administration. White lettering and border on a green background is recommended.

**Lettering**: Letters and digits should be in upper case letters and conform with the standard alphabets for highway signs printed by the Federal Highway Administration, such as ST, RD, LN, CT, AV, CR, etc. As a guide to the choice of alphabets, tests have shown that, for any given legend, better legibility can be obtained by using a relatively wide spacing between letters than by using wider and taller letters with a cramped space.

Conventional abbreviations are acceptable except for the road name itself. Extensive abbreviations for the actual street name should be avoided. However, unusually long street names may require the use of abbreviations to obtain a reasonable sign size. In these cases, attempt to retain the essence of the street name. This may be accomplished by deleting some or most of the vowels of the name.

**Appendix F - Addressing with Neighboring Communities**

When a road travels from one community into another, or runs in and out of a neighboring community, those affected communities should discuss the consistent naming and numbering of those roads to eliminate any possible confusion. This is particularly true where communities share emergency service providers or dispatching services. In this situation, neighboring communities should discuss with each other the implications of duplicate road names that exist in both communities.

Suggestions for resolving addressing issues are as follows:

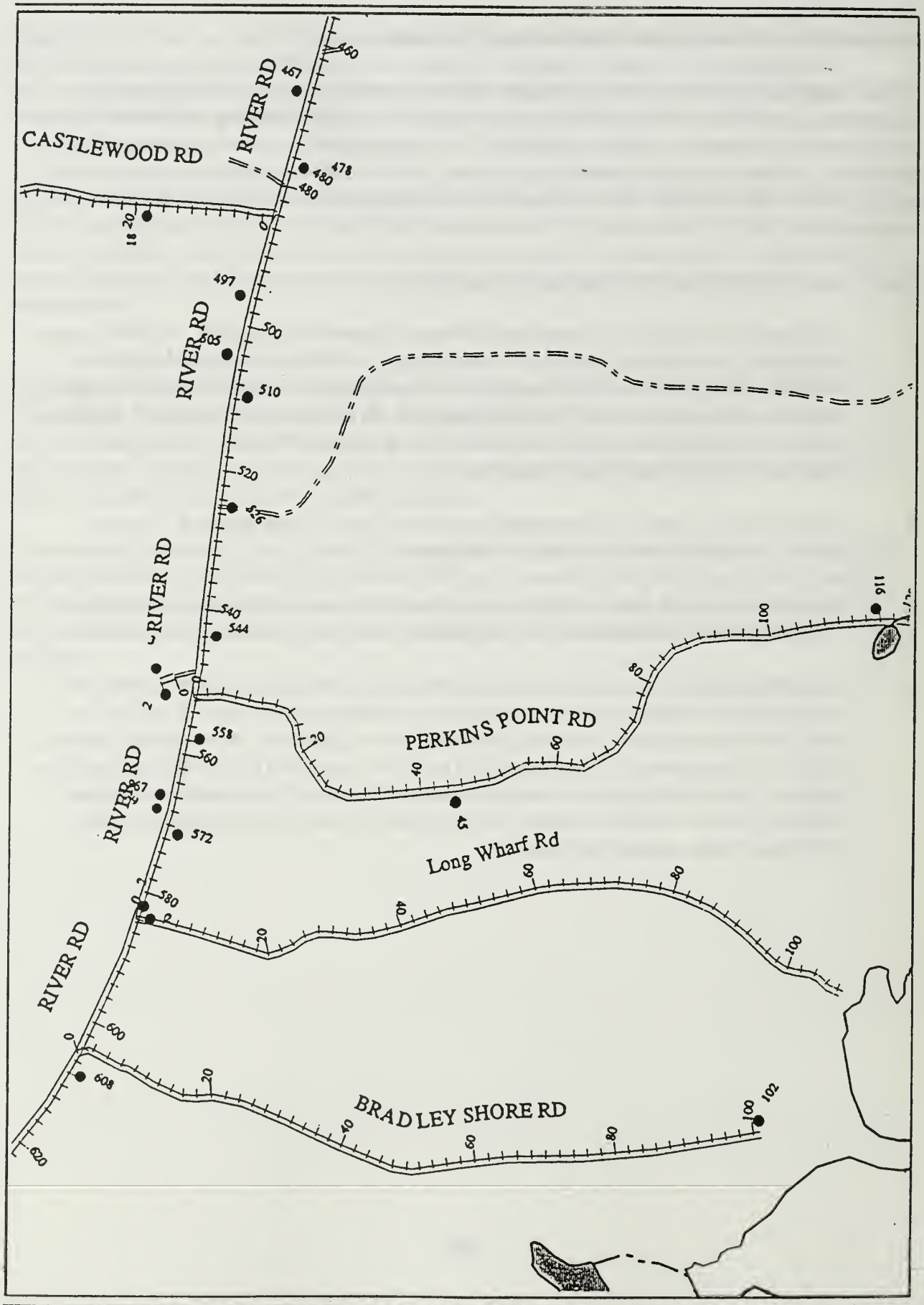
1. If names of non-contiguous streets are duplicated between communities, or within a town and village, the numbering should not overlap (e.g., 1-500 Main Street in Arcadia and 600-1000 Main Street in North Arcadia). This is especially an issue where mail for one town is delivered by a post office in another town. In such a case, every effort should be made to avoid using the same road names. If this is not possible, every effort would be made to avoid duplicate property numbers.

2. When a road runs from one community to another, it can change names at the town border. Numbering will also change at that point.

3. If neighboring towns agree to keep the same name of a road running between towns, the numbering should be consecutive, starting in one community and ending in the other.

4. Numbering along U.S. and state highways should follow the same rules for other name roads passing between towns. For long highways spanning many towns, it will not be practical to use sequential numbering from end-to-end. However, for a highway spanning just two or three towns, the numbering will ideally be sequential for the full length of the highway (and based on the same numbering interval), to avoid any possible confusion between towns. As for other named roads, optimal numbering along highways requires coordination with neighboring towns.

# Appendix G - Sample Address Map



**Appendix H - Sample Address Conversion List**

**Arcadia Address Conversion List**

| # | Road Name | Property Owner | Tax Map # | Plot # | Local Address |
|---|---|---|---|---|---|
| 1 | Caribou Lake Rd | | | | |
| 4 | Caribou Lake Rd | | | | |
| 6 | Caribou Lake Rd | | | | |
| 9 | Caribou Lake Rd | | | | |
| 13 | Caribou Lake Rd | | | | |
| 15 | Caribou Lake Rd | | | | |
| 16 | Caribou Lake Rd | | | | |
| 23 | Caribou Lake Rd | | | | |
| 36 | Caribou Lake Rd | | | | |
| | | | | | |
| 25 | Old State Rd | | | | |
| 36 | Old State Rd | | | | |
| 47 | Old State Rd | | | | |
| 55 | Old State Rd | | | | |
| 58 | Old State Rd | | | | |
| 71 | Old State Rd | | | | |
| 75 | Old State Rd | | | | |
| 80 | Old State Rd | | | | |
| 97 | Old State Rd | | | | |

**Appendix I - Sample Address Announcement Letter**

Dear Resident,

The town of Arcadia, in cooperation with the Acadia Post Office, has assigned new addresses to all residences and businesses in town. These new addresses will be used with the coming Enhanced 9-1-1 service, which links each telephone number to a physical address easily located by emergency responders.

Please note that the assignment of your new address does not mean that Enhanced 9-1-1 service is immediately available. The estimated start up date for Enhanced 9-1-1 service in Maine is late 1997.

All new addresses were created in accordance with the town addressing ordinance passed on (date). This ordinance stipulated that a number be assigned to every 50 foot section along your road, with odd numbers on the right and even on the left.

The number assigned to your home or business should be displayed prominently on your mailbox and on your front door to assist emergency services and the post office in locating you. In addition, utilities, delivery services, and others will use the new addresses for more effective service.

You are requested to notify correspondents, utility companies, publishers, and others of your new address. We suggest that you post your new address on or near your telephone so that you or others can confirm your location in an emergency.

As of (date), your new address will be:

123 Maple Road

For an appropriate period of time, mail with your old address will continue to be delivered.

We appreciate your cooperation and thank all the people who helped with the addressing project.

**Appendix J - Address Maintenance Guidelines**

Below are a few recommendations for maintaining an addressing system. Because each community's addressing system may differ, communities may want to tailor these procedures to meet their needs.

1. When a request is made for an address assignment, the resident's approximate location should be obtained, along with any identifying structures or landmarks that my help locate the structure or property requiring the address.

2. Requests should be handled the same day they are received, whenever possible.

3. House that can be located by verbal description on the address maps may be addressed over the phone. However, care should be taken when using this addressing method. To assign an address by phone, town officials must know the physical description of the structure, surrounding landmarks, the addresses next door or across the street. Addresses that cannot be handled by phone must be assigned by driving to the location and taking linear measurements.

4. When an address is assigned, a form (to be developed by the ESCB) should be filled out and sent to the responsible parties.

5. When a new address is assigned and notifications are complete, maps need to be updated. These updates can occur on a regular schedule, whether once a month or once a quarter.

6. Depending on the level of activity during the year, at least once each year, updated maps should be distributed to the agencies using them. Some users of these maps would be local emergency service providers, as well as tax collectors and other town agencies.

7. Other activities, such as updating dispatching databases, voters registration files, jury lists, and land/tax information systems, could be maintained by the same individual(s) responsible for updating the address database.

**Appendix K - Contact Names and Numbers for Assistance**

Surry Latham, 9-1-1 Program Manager
Department of Administration
Room 226
Mitchell Building
Helena, MT 59620-0113
(406) 444-2420

Stewart D. Kirkpatrick, GIS Services Section Manager
Department of Administration
Room 229
Mitchell Building
Helena, MT 59620-0113
(406) 444-9013

Anita Moon
Department of Administration
Room 226
Mitchell Building
Helena, MT 59620-0113
(406) 444-2022

**Appendix L - 9-1-1 Advisory Council Members**

| | |
|---|---|
| Drew E. Dawson, Chief, E. M. S. Bureau *(Chair)* | Dept. Health & Environ. Sciences, Emergency Medical Services |
| Jane Jelinski, Gallatin County Commissioner | Montana Association of Counties |
| William McCauley, Mayor City of Cut Bank | MT League of Cities and Towns |
| Rick Newby, Chief Miles City Police Department | MT Association of Chiefs of Police |
| Kurt Seward, Rosebud County Sheriff | MT Sheriffs & Peace Officers Assoc. |
| Richard Brumley, Lewistown, MT | Montana Emergency Medical Services Association |
| Marshall Kyle, Assistant Chief, Missoula Fire Department | Montana State Fire Chiefs' Association |
| Dave Mason, Helena, MT | Montana State Volunteer Firefighters Association |
| Ken Mikkelson, Ashland, MT | Montana Fire Districts Association |
| Jim Kraft, Coordinator Yellowstone County D.E.S. | Association of Disaster & Emer. Services Coordinators |
| Al Brockway, Crime Control Division Department of Justice | Montana Board of Crime Control |
| Major Bert Obert, Montana Highway Patrol | Montana Highway Patrol |
| James Anderson, Operations Officer Disaster & Emergency Services | Dept. of Military Affairs, Disaster & Emergency Services Division |
| Dan Green, U S WEST Communications | U S WEST Communications |
| Bill Wade, Plant Manager, Mid-Rivers Telephone | Montana Telephone Assoc. |
| Michael C. Strand, Executive Vice President MITS | Montana Independent Telecommunications Systems |

**Appendix L - 9-1-1 Advisory Council Members (Cont.)**

| | |
|---|---|
| Ted Benson, Technical Operations Manager<br>Western Wireless | Western Wireless |
| Donna Hulse, Manager, Comnet Cellular | Comnet Cellular |

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